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environmental assessment

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GLADE CREEK

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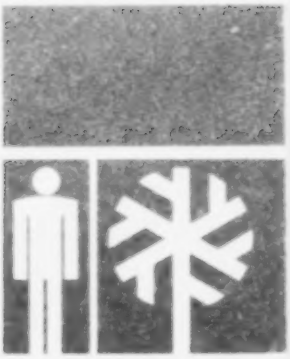

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draft
september 1989

GLADE CREEK
NEW RIVER GORGE NATIONAL RIVER • WEST VIRGINIA

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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INTRODUCTION

This development concept plan (DCP) for the Glade Creek planning unit represents another step in the ongoing planning, management, and development process that is making the New River Gorge National River a reality. The planning process began with the preparation of the park's *General Management Plan* in 1982, which provided a parkwide overview of resource management strategies and visitor activities. In 1988 the *Park Management and Development Guidelines* was prepared. That document updates the direction established by the general management plan, sets the stage for more detailed planning, and establishes the philosophical framework for site-specific decision making. The *Park Management and Development Guidelines* contains the following statements.

The purposes identified for the park will be to

> conserve and interpret outstanding natural, scenic, and historic values and objects in and around New River Gorge, and
>
> allow resource-based recreation that does not impair resource values.

Also in that document, the following statements summarized the significance of the resources at the national river:

> Size and topographic relief make the gorge an outstanding scenic resource in West Virginia.
>
> New River Gorge provides some of the best extended season white-water boating in the eastern United States.
>
> New River is the top warm-water stream fishery in the state.
>
> New River is believed to be the oldest river on the North American continent, and it illustrates "rejuvenated stream" processes.
>
> The river corridor has resulted in unusual plant and animal diversity.
>
> New River Gorge contains remains of the mining and transportation of "smokeless" coal, which played a major role in America's industrial history.

After identifying the purpose and significance of the resources, the following series of management objectives – which represent goals that park managers will work toward – were formulated for New River Gorge National River:

> Protect and maintain the natural diversity of plants and animals.
>
> Sustain the warm-water fishery while protecting natural diversity.
>
> Preserve outstanding scenic views in and around the gorge – preserve the natural setting in the gorge from I-64 north . . . [and] the rural pastoral scenery south of I-64.
>
> Encourage visitors to use related interpretive and recreation sites outside the park boundary.

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Preserve coal mining, railroading, and other historic resources that best illustrate park significance.

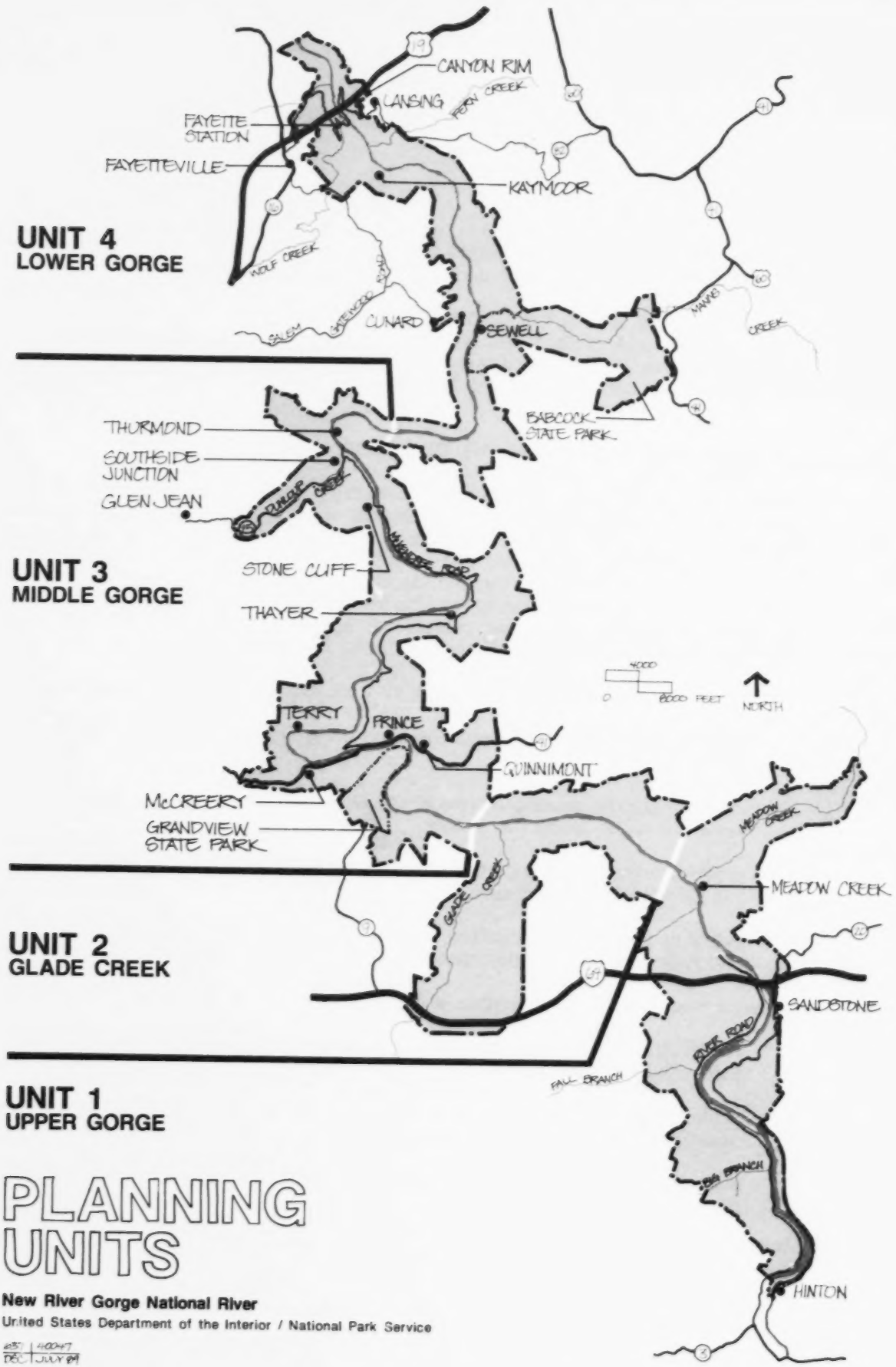
In cooperation with others, achieve and maintain water quality to meet state standards that allow for primary human contact.

Develop a system of land- and water-based recreation opportunities that allows visitors to experience the park's resources to the extent that natural, cultural, and scenic values are not impaired.

The local towns and communities associated with New River are significant resources and integral to the visitor experience; therefore, the National Park Service will work with these communities to help perpetuate their character and vitality.

Work with the community to the extent possible to help them maximize economic benefits related to park development without impairing key resources.

For purposes of the current planning efforts at New River Gorge National River, the park has been divided into planning units. A planning unit is a discrete section of the park that has both physical and visitor use characteristics that differentiate it from other sections of the park. At New River Gorge National River there are four such geographic areas that have been designated as planning units. Moving from south to north (following the flow of the river) those units are: Unit 1 – Upper Gorge, Unit 2 – Glade Creek, Unit 3 – Middle Gorge, and Unit 4 – Lower Gorge (see Planning Units and Location maps). The emphasis and significance of each unit is explained in appendix A.



PLANNING UNITS

New River Gorge National River

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STUDY AREA

INTRODUCTION

The general area being considered in this DCP is the Glade Creek planning unit, which is in the southern half of the park roughly between Grandview State Park and Quinnimont on the northwest and Sewell Branch and Meadow Creek to the southeast.

The specific study area in this DCP is only that portion of the Glade Creek planning unit that is on the south side of the New River (see Study Area map). This is the area commonly referred to as Glade Creek. The watershed for the section of Glade Creek that flows through the park is included within the park boundary.

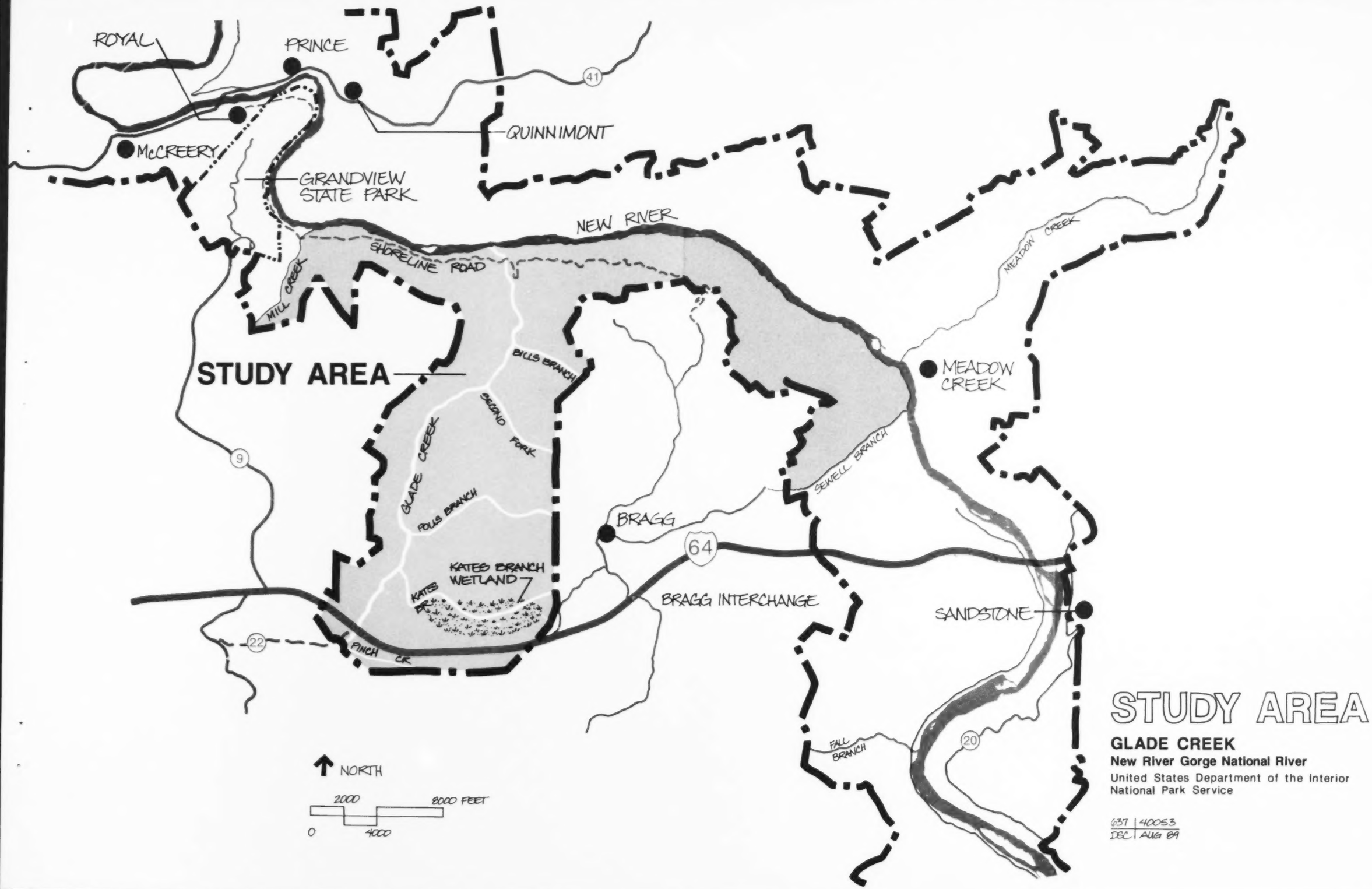
PLANNING OBJECTIVES FOR THE GLADE CREEK UNIT

Glade Creek is the largest unified tract of relatively undeveloped land within the park; it also contains the only known wetland in the area, which is near the head of Kates Branch. The restorative powers of nature are clearly demonstrated in this unit, where evidence of former settlement and logging are barely visible. As such, the Glade Creek planning unit will be managed to protect the wilderness character of this undeveloped section of the park. Hiking, fishing, and exploration will be the featured uses in the unit. Vehicle use will be limited to access points and corridors along the perimeters of the unit. Planning objectives for visitor use and development for the Glade Creek unit will be to

- provide safe access to Glade Creek for trout fishing, hiking, and primitive camping
- improve access to fishing campsites along the New River north of the mouth of Glade Creek
- establish parking areas and provide visitor use information at entry points to roadless areas within the Glade Creek unit
- provide various hiking opportunities for visitors with differing skills and interests within this primitive area of the park
- establish sites for nonmotorized camping at locations that are high in visual quality and near outdoor recreation resources (e.g., swimming holes and fishing spots)

Planning objectives for interpretation of the Glade Creek unit will be to

- inform visitors about what knowledge, equipment, and skills are needed to participate safely and responsibly in desired activities
- inform visitors about the role of the river and gorge as a corridor that allowed passage of plant and animal species from north to south and from south to north
- inform visitors about how industry (logging) changed the gorge landscape and how natural processes are reclaiming it



STUDY AREA

GLADE CREEK

New River Gorge National River

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Public Law 100-534 (October 26, 1988) authorized a Glade Creek visitor facility; this facility will be addressed in a later planning study. For the purposes of this DCP, however, it is assumed that this facility will someday become a reality and that its construction will not seriously affect any of the proposals being made for this DCP.

DESCRIPTION OF THE ENVIRONMENT

OVERVIEW

The Glade Creek planning unit consists of approximately 5,000 acres of relatively undeveloped land, with only a few small tracts of private land. It is one of the largest most accessible natural areas within the New River Gorge National River and is matched only by Babcock State Park. Although signs of former human occupation exist – such as split rail fences, collapsed farm buildings, and a few exotic plant species – the Glade Creek drainage has some of the most pristine and least disturbed natural scenery within the national river.

Because a large portion of the Glade Creek unit is beyond the sight and sounds of highways, railroad tracks, and residential development, the area offers tremendous opportunities for solitude, backcountry camping, hiking, and fishing that are unavailable elsewhere within the park.

NATURAL ENVIRONMENT

The forest in the Glade Creek unit is primarily mixed deciduous, consisting of dogwood, redbud, and species of oaks and maple. Historically, Glade Creek was logged rather extensively, and most of the present growth represents second generation.

Kates Branch wetland, in the southeastern corner of the Glade Creek unit, is the only wetland known in New River Gorge National River. This wetland is a unique, boggy ecosystem at about 2,600 feet elevation. Kates Branch is a tributary of Glade Creek. In addition to topographic and geologic factors, beavers appear to have contributed to the formation of the wetland. Kates Branch wetland supports many different wetland species including several rare species of plants. The West Virginia Department of Natural Resources located three rare species – two orchids (*Calopogon puchellus* [grass pint orchid] and *Pogonia ophiloglossoides* [rose pogonia]) and one sedge (*Carex styloflexa*). The orchids are found in a few other places in West Virginia; however, Kates Branch wetland supports the only known location of this sedge in West Virginia. All three species are listed on the state's "Species of Special Concern" list.

The Glade Creek drainage provides habitat for a variety of wildlife, such as raccoons, beavers, turkeys, deer, and bear. It provides good woodland habitat for many different bird species, such as warblers, woodpeckers, thrushes, and owls. According to informal consultation with U.S. Fish and Wildlife Service, there are no known threatened or endangered species or critical habitats.

Glade Creek flows north for 18.1 miles before it reaches the New River near the abandoned community of Hamlet. About 6 miles of Glade Creek are in the boundary of New River Gorge National River. The creek drains approximately 63.3 square miles and falls about 119.2 feet per mile. Within the park boundary the creek flows through a steep canyon that ranges from 700 to 1,000 feet deep and drops approximately 1,600 feet. Glade Creek is considered one of the best trout streams in southern West Virginia by the West Virginia State Department of Natural Resources. The creek is stocked on a "put and take" basis once every two weeks in the spring and once in October with adult brook, rainbow, and brown trout.

CULTURAL ENVIRONMENT

The logging industry began to flourish in West Virginia in the 1880s. The forest of the New River Gorge and surrounding plateaus were extensively logged during the heyday of the lumber industry. This heavily wooded region now consists entirely of second-growth timber. A 1916 report by the West Virginia Geological Survey states that Raleigh County (which encompasses Glade Creek) had one of the heaviest stands of timber in the state.

Two towns, Glade and Hamlet (which no longer exist), developed along the banks of New River on opposite sides and were connected by a railroad bridge. The towns functioned as one town, with the difference being that Glade was in Fayette County and Hamlet was in Raleigh County. Sawmills were built at both locations, and in 1908 a narrow gauge iron-rail steam railroad was built from New River up Glade Creek into the heart of the timber stands. Temporary lumber camps were set up in the woods, then dismantled and moved once an area was sawed out. By the end of the 1920s most of the timber had been cut and the lumber industry in New River had been stopped.

No significant cultural resources are known to exist within the study area.

SCENIC RESOURCES

The Glade Creek drainage offers visitors some of the least developed and least disturbed natural scenery within the New River Gorge National River. It also offers a smaller scale of riparian environment than along the New River.

RECREATIONAL RESOURCES

On the alignment that once served the narrow gauge railroad for the lumber operation, the Glade Creek Trail (about 6 miles long) has been established. This trail provides scenic views of the creek and surrounding valley and opportunities for hikers, photographers, hunters, and fishermen to find solitude and experience a wild environment within New River Gorge National River, and it offers additional opportunities for visitors who want access to backcountry camping areas. The trail begins at the confluence of Glade and Pinch creeks, and for the first 3 miles runs along the east side of Glade Creek. The trail then crosses the creek by way of a ford and follows along the west side of the creek for the last 3 miles before reaching the New River. Scenic views of the creek, small waterfalls, and tributaries draining into Glade Creek occur periodically along the trail.

The unmaintained four-wheel-drive Shoreline Road intersects the Glade Creek trail just south of the New River. This road originates near Prince and follows an old railroad bench along the Raleigh County side of New River and terminates at the derelict bridge just south of the mouth of Glade Creek. Although passable by two-wheel-drive vehicles from Prince to Mill Creek, Shoreline Road requires four-wheel-drive vehicles from Mill Creek to the mouth of Glade Creek.

PURPOSE AND NEED FOR THE PLAN

The Glade Creek area was designated as a primitive area in the 1982 *General Management Plan*, the intent being to eliminate motorized access to sites within the unit and provide a place for visitors to experience solitude – without modern conveniences and machine-made noise.

However, motorized access still exists into the Glade Creek area. The principal current and traditional uses within the study area are trout fishing in Glade Creek and warm-water fishing in the New River. The latter activity usually means four-wheel-drive vehicle access to fishing campsites by way of Shoreline Road, the existing jeep road that parallels the New River from Royal near the Prince Bridge. The road is in deplorable condition – with mud holes stretching for miles even during dry weather. This condition is exacerbated as vehicles continue to use the road, creating more ruts in the clay soil and enlarging the area of impact.

Some hiking also occurs within the area, and the public has expressed the desire to have more hiking opportunities. Both the condition of the Shoreline Road and the incompatibility of vehicles and hikers using the same route make this road unsuitable for hiking. Because Shoreline Road is the most desirable corridor for the proposed Mary Ingles Trail (described later) through this section of the park it may be necessary to choose between vehicle or pedestrian access or to compromise and allow both uses.

Furthermore the conflict between the intent for primitive use of the area and the existing pattern of four-wheel-drive vehicle access must be resolved.

This DCP addresses these problems, presents two alternatives for solving the problems, and assesses what impact there would be on the environment if either alternative is implemented.

ALTERNATIVES

The following section of this document presents two alternatives for development of the Glade Creek study area. The general description of the alternatives is followed by specific development concepts, compared between the two alternatives on table 1 and on the accompanying alternative maps. Alternative 1 is the Park Service's preferred alternative. Cost estimates for the two alternatives follow the maps.

All trail proposals in the two alternatives are consistent with the *Parkwide Trail Plan* for New River Gorge National River, and individual trails are classified (see alternative maps) to carry out the intent of that plan.

Under both alternatives, a sediment control plan would be filed with the state of West Virginia prior to construction of any parking areas adjacent to streams.

ALTERNATIVE 1: TRADITIONAL ACCESS ALTERNATIVE (PREFERRED ALTERNATIVE)

This alternative, the details of which are listed in table 1 and shown on the following Alternative 1 map, is based on the concept that existing access and use patterns are appropriate and that improvements could be made to enhance the quality of those activities. This alternative would accommodate both vehicle-supported uses – such as river fishing, family camping, and picnicking along the New River – and backcountry uses including hiking, backpacking, and trout fishing.

Under this alternative, the proposed Mary Ingles Trail and the Glade Creek Trail would be moderate-use trails and the Plumley Mountain and Uplands trails would be low-use trails (see Alternative 1 map).

The intent of the 1982 *General Management Plan* was to close Shoreline Road from Mill Creek to Glade Creek to keep the area as a natural area. However, due to popular opinion and long-standing traditional use of this road by fishermen, improvement of this road is being proposed in the preferred alternative in this plan. The 1982 plan also recommended 20 walk-in/boat-in primitive campsites near the mouth of Glade Creek. In the past seven years, this proposal has also been rethought, and only five walk-in and five drive-in campsites are currently being recommended in that area. It was felt that, based on current use in the park, only 10 campsites (a mix of walk-in and drive-in) were needed to serve the needs of the park visitors. These proposals are revisions to the 1982 plan, and their impacts are assessed in the "Environmental Consequences" section of this document.

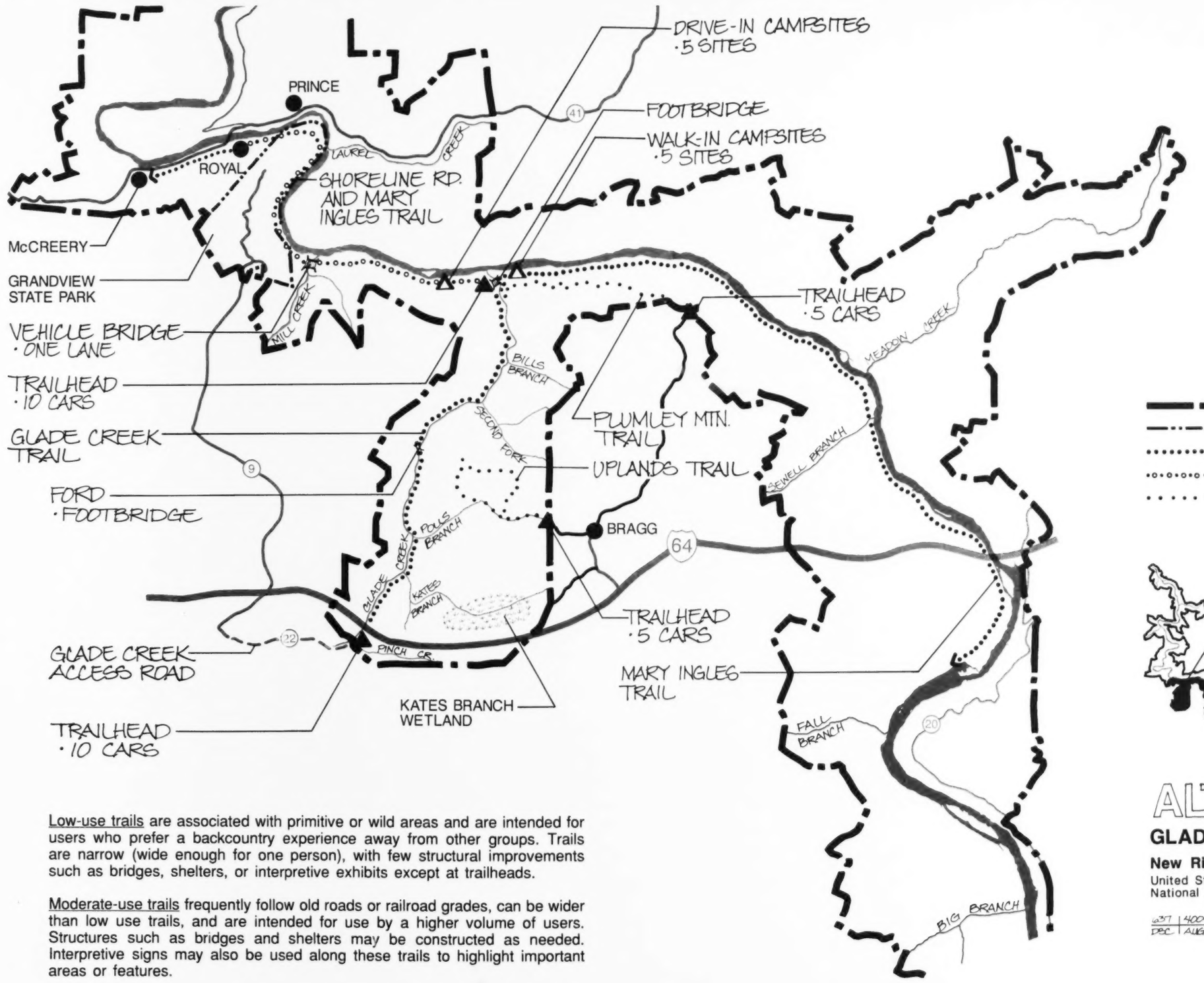
ALTERNATIVE 2: PRIMITIVE AREA ALTERNATIVE

This alternative, shown in detail on the Alternative 2 map, is consistent with the 1982 *General Management Plan* concept of Glade Creek as a primitive area without motorized access to the interior of the unit. Use upstream of Mill Creek would be confined to those resource recreation activities that would not require vehicle support. Only two moderate-use trails (see Alternative 2 map) – the Mary Ingles Trail and the Glade Creek Trail – would be developed under this alternative. Exploration of other parts of the unit on foot would be permitted, but no facilities would be provided off the two developed trail corridors.

Table 1. Description of the Alternatives

ALTERNATIVE 1	ALTERNATIVE 2
Glade Creek Access Road, Trailhead, and Trail	**Glade Creek Access Road, Trailhead, and Trail**
Retain gravel access road (Route 22) for trailhead access	Same
Develop trailhead with parking for 10 cars at confluence of Glade and Pinch creeks; install floodproof vault toilet at trailhead	Same
Improve the existing Glade Creek Trail corridor (the old railroad spur) with drainage devices; revegetate where necessary	Same
Construct footbridge to facilitate stream crossing during periods of high water	Same
Restrict access to I-64 bridge service road to inspectors only	Same
Establish a trailhead and parking for 10 cars at the mouth of Glade Creek just south of the New River; install a floodproof vault toilet at the trailhead	No action
Shoreline Road	**Shoreline Road**
Improve road from Royal to mouth of Glade Creek	Improve road from Royal to Mill Creek
Negotiate with CSX to install a crossing gate or warning light at the crossing at Royal	Same
Repair the Mill Creek bridge for vehicle traffic	Repair Mill Creek bridge for foot traffic only
Establish five drive-in campsites along the road near the mouth of Glade Creek; install floodproof vault toilet	Create trailhead parking for 10 cars at Mill Creek; install floodproof vault toilet at trailhead

ALTERNATIVE 1	ALTERNATIVE 2
Mary Ingles Trail	**Mary Ingles Trail**
Establish Mary Ingles Trail, with hiking allowed on the entire trail and vehicles and bicycles allowed only on the trail from Royal to Glade Creek	Same, except vehicles and bicycles allowed only on the trail from Royal to Mill Creek
Modify Old Glade Creek bridge at mouth of Glade Creek (near the New River) to become a footbridge	Same
Establish five walk-in campsites along the trail at the area south of the New River and east of Glade Creek; install floodproof pit or composting toilets	Establish eight walk-in campsites at suitable sites near the mouth of Glade Creek; install floodproof pit or composting toilets
Plumley Mountain Trail	**Plumley Mountain Trail**
Establish trailhead for five vehicles within park boundary; gate road and convert to hiking/horse trail	Close roads
Uplands Trail	**Uplands Trail**
Establish trailhead for five vehicles within park boundary just west of Bragg.	Close roads
Establish a trail system using portions of existing jeep roads; allow hiking and horses on trail	



Low-use trails are associated with primitive or wild areas and are intended for users who prefer a backcountry experience away from other groups. Trails are narrow (wide enough for one person), with few structural improvements such as bridges, shelters, or interpretive exhibits except at trailheads.

Moderate-use trails frequently follow old roads or railroad grades, can be wider than low use trails, and are intended for use by a higher volume of users. Structures such as bridges and shelters may be constructed as needed. Interpretive signs may also be used along these trails to highlight important areas or features.

ALTERNATIVE 1

GLADE CREEK

New River Gorge National River

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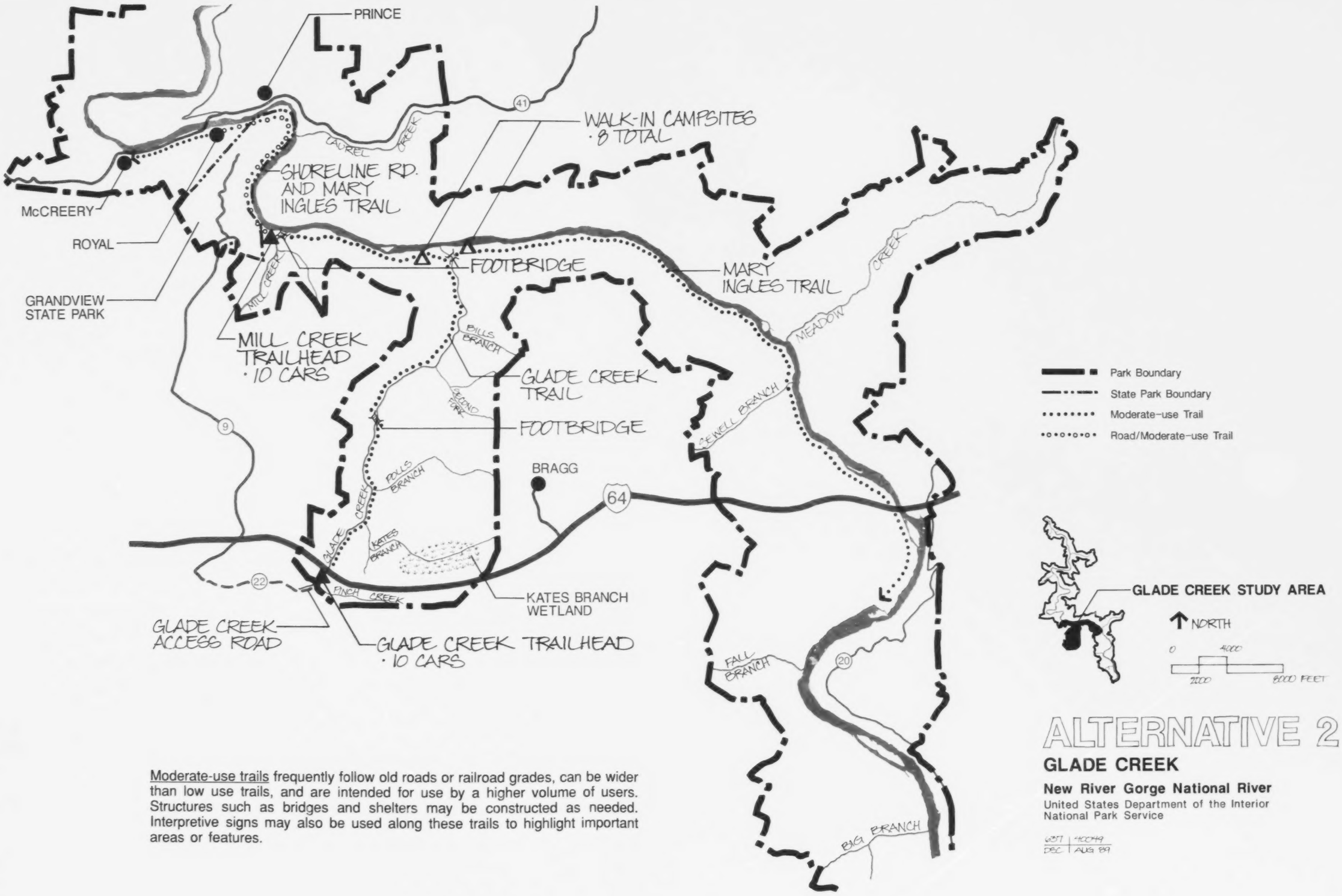

Moderate-use trails frequently follow old roads or railroad grades, can be wider than low use trails, and are intended for use by a higher volume of users. Structures such as bridges and shelters may be constructed as needed. Interpretive signs may also be used along these trails to highlight important areas or features.

ALTERNATIVE 2

GLADE CREEK

New River Gorge National River

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Table 2

Development Item	Q
Pinch/Glade Creeks Trailhead	
Parking (gravel)	1
Vault toilet	o
Glade Creek Trail	
Drainage and revegetation	5
Glade Creek Ford	
Footbridge	2
Mouth of Glade Creek	
Parking (gravel)	1
Vault toilet	o
Shoreline Road	
Road improvements	5
Mill Creek bridge repair (for vehicle use)*	6
Campsites (drive-in)	5
Vault toilet	o
Mary Ingles Trail**	
Establish trail from Royal to the mouth of Glade Creek	5
Reconstruct old Glade Creek bridge*	6
Walk-in campsites at mouth of Glade Creek	5
Pit toilets	o
Plumley Mtn. Trail	
Parking (gravel)	5
Trail	2
Uplands Trail	
Parking (gravel)	5
Establish trail system	6
TOTAL	

*Assumes the supporting structural s
**Costs for establishing this trail from
in this unit have not been estimated
determined. This will be done in a fu
***Costs are included in costs for Sh

Cost Estimates, Alternative 1

antity	Gross Construction Cost	Advance and Project Planning Cost	Total Cost
cars	$ 11,000	$ 2,000	$ 13,000
e	26,000	5,000	31,000
miles	105,000	26,000	131,000
x 3' span	7,000	2,000	9,000
cars	11,000	3,000	14,000
e	26,000	5,000	31,000
miles	734,000	140,000	874,000
x 12'	28,000	7,000	35,000
	7,000	2,000	9,000
e	26,000	5,000	31,000
miles	***	***	***
x 5'	12,000	3,000	15,000
	7,000	2,000	9,000
e	13,000	3,000	16,000
ars	6,000	1,000	7,000
miles	55,000	11,000	66,000
ars	6,000	1,000	7,000
iles	118,000	30,000	148,000
	1,198,000	**248,000**	**1,446,000**

tem is sound.
he mouth of Glade Creek to the southern end of the trail
ecause the exact alignment for this trail has not yet been
re study.
eline Road improvements.

Table 3. Cost Estimates, Alternative 2

Development Item	Quantity	Gross Construction Cost	Advance and Project Planning Cost	Total Cost
Pinch/Glade Creeks Trailhead				
Parking (gravel)	10 cars	$ 11,000	$ 2,000	$ 13,000
Vault toilet	one	26,000	5,000	31,000
Glade Creek Trail				
Drainage and revegetation	5.3 miles	105,000	26,000	131,000
Glade Creek Ford				
Footbridge	25' x 3'	7,000	2,000	9,000
Shoreline Road				
Road improvements (Royal to Mill Creek)	3.2 miles	420,000	80,000	500,000
Mill Creek Bridge repair (pedestrian use)*	60' x 5'	12,000	3,000	15,000
Parking (gravel) at Mill Creek	10 cars	11,000	3,000	14,000
Vault toilets at Mill Creek	one	26,000	5,000	31,000
Mary Ingles Trail**				
Establish vehicle/hiking trail from Royal to Mill Creek	3.2 miles	***	***	***
Establish hiking trail from Royal to Glade Creek	2.4 miles	48,000	12,000	60,000
Reconstruct old Glade Creek bridge*	60' x 5'	12,000	3,000	15,000
Campsites at mouth of Glade Creek	8	11,000	3,000	14,000
Pit toilets at mouth of Glade Creek	one	13,000	3,000	16,000
TOTAL		**702,000**	**147,000**	**849,000**

*Assumes the supporting standard system is sound.
**Costs for establishing this trail from the mouth of Glade Creek to the southern end of the trail in this unit have not been estimated because the exact path for this trail has not yet been determined.
***Costs are included in the costs for Shoreline Road improvements.

ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

ALTERNATIVE 1

Impacts on Natural Resources

Approximately 20 miles of trail[1] would be built under this alternative. Most of the trails would follow old roads that currently receive frequent all-terrain vehicle use.

There would be no significant new impacts to wildlife, fisheries, or water quality. Portions of the study area, particularly along the New River southeast of Mill Creek, are currently subjected to human use and impacts during the summer season. Small mammals and bird species inhabiting the proposed trails might be disturbed or displaced during construction.

Consultation with the U.S. Fish and Wildlife Service indicates no known presence of threatened or endangered species or critical habitat.

No significant impact to air quality would occur under this alternative. There would be minor short-term reductions in air quality in the immediate construction areas due to dust and fumes.

Development of a trailhead and parking for 10 cars at the confluence of Pinch and Glade creeks would not be expected to further impact the site because the existing disturbed area (.25 acre) would be used.

Selective revegetation and drainage improvements on the Glade Creek Trail would not have any adverse effects on the area and would improve sites where erosion is a problem. Approximately 126,000 square feet of land would be reclaimed by reducing the width of the trail, which originally was a railroad spur line. The addition of the footbridge would have no adverse impacts on the stream.

The proposed trailhead and parking for 10 vehicles at the mouth of Glade Creek would impact approximately 0.1 acre of land and require clearing trees and other existing vegetation. This area is currently used for parking by recreation users, and erosion problems have been created due to the lack of planned drainage. New development would be designed to eliminate the drainage/erosion problems. The addition of a floodproof vault toilet would improve sanitary facilities in the area and protect the New River and nearby creeks from contamination. Vault toilets would be pumped out regularly to avoid any leaching of solid wastes into the river.

Improvement of Shoreline Road from Royal to Glade Creek might increase use. However, improving the surface and providing for adequate drainage would prevent further deterioration of the road and stop sediment from entering the New River. The slope above and below the road would be stabilized to prevent further erosion. No adverse impacts would be expected from reconstruction of the Mill Creek bridge for vehicles.

The establishment of walk-in and drive-in campsites along the New River at Glade Creek, which would be in accord with the *Code of Federal Regulations*, would help prevent further

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[1] This figure includes only 5.6 miles of the Mary Ingles Trail; however, the *Trail Plan* for the park proposes about 5.3 additional miles of this trail within the study area.

adverse impacts on the area. With designated campsites, random use and impacts to the surrounding environment would be less likely to occur. The walk-in campsites would occupy about 0.5 acre, as would the drive-in campsites; however, the areas have already been disturbed so there would be no new impacts. The addition of a floodproof vault toilet would improve sanitary facilities in the area and protect the New River and nearby creeks from contamination. Vault toilets would be pumped out regularly to avoid any leaching of solid wastes into the river. Campsites and floodproof pit or composting toilet facilities would be at least 100 feet from the river's edge, preventing contamination of the water, and designated grills or fire rings would prevent the formation of multiple fire rings – which sterilize the soil and are used as places to dispose of trash.

Establishment of Mary Ingles Trail in this unit would mostly follow Shoreline Road and an existing trail, which basically parallel the river (on the south and west). There is one approximately 2 ½-mile segment (east of the mouth of Glade Creek) where the ground would have to be cleared to establish the trail – about 60,000 square feet of vegetation; this is not expected to be a significant impact. No significant impacts are expected from establishment of the Mary Ingles Trail in the study area; however, the exact trail alignment has not been chosen and further planning, impact analysis, and appropriate mitigation measures will be done separately for the Mary Ingles Trail. There would be no adverse impacts expected from reconstruction of the Glade Creek bridge for foot travelers.

The trailhead and parking for the Plumley Mountain trail and the Uplands trail would accommodate approximately five cars each and require clearing of approximately .05 acre each. There would be no new impacts from establishment of these trailheads and trails because existing roads would be used.

Impacts on Cultural Resources

No known impacts to cultural resources would be expected from implementation of this alternative.

Impacts on Visitor Use

The development of approximately 20 miles of trails would provide visitors with hiking opportunities to rather remote areas of the gorge and expand their experiences of New River Gorge National River.

The establishment of campsites along the New River near the mouth of Glade Creek could adversely affect those local users who might be less inclined to continue recreational use in this area due to the perceived "improvement and modernizing" of the sites. However, use by recreational users who are accustomed to a more developed camping experience might increase.

Keeping the road from Royal to Glade Creek open for vehicles would be a positive impact for fishermen and visitors who have been using this access road.

The construction of a railroad crossing gate or warning lights at Royal would improve visitor safety in gaining access to the Glade Creek area.

Closing all the existing roads to vehicular traffic and converting them to trails on Plumley Mountain (including the Uplands trail) might adversely affect and inconvenience local users in the area who have traditionally used their vehicles to gain access for hunting.

ALTERNATIVE 2

Impacts on Natural Resources

Approximately 11 miles of trail[2] would be built under this alternative. All trails would use existing road or trail alignments.

There would be no significant new impacts to wildlife, fisheries, or water quality. Portions of the study area, particularly along the New River southeast of Mill Creek, are currently subjected to human use and impacts during the summer season. Small mammals and bird species inhabiting the proposed trails might be disturbed or displaced during construction.

Consultation with the U.S. Fish and Wildlife Service indicate no known presence of threatened or endangered species or critical habitat.

No significant impact to air quality would occur. There would be minor short-term reductions in air quality in the immediate construction areas due to dust and fumes.

As in alternative 1, development of a trailhead and parking for 10 cars at the confluence of Pinch and Glade creeks would not be expected to further impact the site because the existing disturbed area would be used. New development would eliminate drainage/erosion problems.

Selective revegetation and drainage improvements on the Glade Creek Trail would not have any adverse effects on the area and would improve sites where erosion is a problem. Approximately 126,000 square feet of land would be reclaimed by reducing the width of the trail, which originally was a railroad spur line. There would be no adverse impacts from the footbridge over Glade Creek.

Improvement of Shoreline Road from Royal to Mill Creek might increase use. However improving the surface and providing adequate drainage would prevent further deterioration of the road and stop sediment from entering the New River. The slope above and below the road would be stabilized to prevent further erosion. Closing Shoreline Road at Mill Creek to vehicles would allow about 2.4 miles of the road to be reclaimed.

The proposed trailhead and parking for 10 vehicles at the mouth of Mill Creek would impact approximately 0.1 acre of land and require clearing trees and other existing vegetation. This area is currently used for parking by recreation users, and erosion problems have been created due to the lack of planned drainage. The new development would be designed to eliminate the drainage/erosion problems. The addition of a floodproof vault toilet would improve sanitary facilities in the area and protect the New River and nearby creeks from contamination. Pumping out the vault toilets regularly would be done to avoid any leaching of solid wastes into the river.

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[2] This figure includes only 5.6 miles of the Mary Ingles Trail; however, the *Trail Plan* proposes about 5.3 additional miles of this trail within the study area.

Establishment of Mary Ingles Trail in this unit would mostly follow Shoreline Road and an existing trail, which basically parallel the river (on the south and west). There is one approximately 2 ½-mile segment (east of the mouth of Glade Creek) where the ground would have to be cleared to establish the trail – about 60,000 square feet of vegetation; this is not expected to be a significant impact. No significant impacts are expected from establishment of the Mary Ingles Trail in the study area; however, the exact trail alignment has not been chosen and further planning, impact analysis, and appropriate mitigation measures will be done separately for the Mary Ingles Trail. There would be no adverse impacts expected from reconstruction of the footbridge at Mill Creek.

The establishment of walk-in campsites along the New River at Glade Creek, which would be in accord with the *Code of Federal Regulations*, would help prevent further adverse impacts on the area. These campsites would occupy about 0.5 acre of land that has already been disturbed, eliminating new impacts to the resources in the area. With designated campsites, random use and impacts to the surrounding environment would be less likely to occur. Campsites and floodproof toilet facilities would be at least 100 feet from the river's edge, preventing contamination of the water, and designated grills or fire rings would prevent the formation of multiple fire rings – which sterilize the soil and are used as places to dispose of trash.

Closing the existing jeep roads on Plumley Mountain would allow about 10 miles of roads to be reclaimed.

Impacts on Cultural Resources

No known impacts to cultural resources would be expected under this alternative.

Impacts on Visitor Use

The development of approximately 11 miles of trails would provide visitors hiking opportunities within rather remote areas of the gorge and expand their experience of New River Gorge National River.

The establishment of campsites along the New River near the mouth of Glade Creek could adversely affect those local users who might be less inclined to continue recreational use in this area due to the perceived "improvement and modernizing" of the sites. However, use by recreational users who are accustomed to a more developed camping experience might increase.

Closing vehicle access to Shoreline Road from the mouth of Mill Creek southeast along the New River would impact local users and result in some inconveniences for people who have traditionally driven and camped in this area.

The construction of a railroad crossing gate or warning lights at Royal would improve visitor safety in gaining access to the Glade Creek area.

Closing all the existing roads to vehicular traffic and converting them to trails on Plumley Mountain (including the Uplands trail) might adversely affect and inconvenience local users in the area who have traditionally used their vehicles to gain access for hunting.

COMPLIANCE

The trailheads and campsites proposed in this DCP are identified as excepted actions in the floodplain under NPS "Final Procedures for Implementing Executive Order 11988 and Executive Order 11990" (45 *Federal Register* 35916 May 28, 1980, as revised by *Federal Register* #163 36718 August 23, 1982). Sanitary facilities are also acceptable in a floodplain provided that floodproofing is a design and construction consideration.

Table 4. Comparison of Impacts

ALTERNATIVE 1	ALTERNATIVE 2
Impacts on Natural Resources	**Impacts on Natural Resources**
20 miles of trails would be available, most of which would be on previously disturbed roads and trails	11 miles of trails would be available, most on previously disturbed roads and trails
No new impacts on wildlife, fisheries, or water quality; some displacement or disturbance of small mammals and birds during construction	Same
No known impact on threatened or endangered species or critical habitat	Same
Minor, short-term, localized impact on air quality due to construction	Same
Reclamation of 126,000 sq ft of land along Glade Creek Trail, with improved drainage and less erosion along entire trail	Same
Development of campsites and trailheads would impact about 0.1 acre of previously undisturbed area and 1.4 acres of previously disturbed area	Development of campsites and trailheads would impact no previously undisturbed area and about 0.9 acre of previously disturbed area
Adequate drainage and improvements along 5.6 miles of Shoreline Road (Royal to Glade Creek) would prevent further deterioration and stop sedimentation of the New River; slope stabilization would prevent further erosion	Adequate drainage and improvements along 3.4 miles of Shoreline Road (Royal to Mill Creek) would prevent further deterioration and stop sedimentation of the New River; slope stabilization would prevent further erosion
Designation of 10 campsites would reduce random use and impacts on natural resources, improve sanitary conditions, and prevent contamination of river and adjacent streams	Designation of 8 campsites would reduce random use and impacts on natural resources, improve sanitary conditions, and prevent contamination of river and adjacent streams
Impacts on Cultural Resources	**Impacts on Cultural Resources**
No known impacts	No known impacts

ALTERNATIVE 1	ALTERNATIVE 2
Impacts on Visitor Use	**Impacts on Visitor Use**
20 miles of trails would be available for hiking, 5.6 of which would also be available for vehicles and bicycles	11 miles of trails would be available for hiking, 3.2 of which would also be available for vehicles and bicycles
Designated campsites would improve camping opportunities for some, although some could perceive this as intrusive to the primitive camping experience	Same
Keeping Shoreline Road open from Royal to Glade Creek would continue traditional access for fishermen and visitors	Keeping Shoreline Road open from Royal to Mill Creek would continue traditional access for fishermen and visitors; closing the road from Mill Creek to Glade Creek could inconvenience local fishermen and visitors
Visitor safety would be improved at Royal because of the crossing gate or warning light	Same
Closing the roads on Plumley Mountain to vehicular traffic would inconvenience local users who used the roads for hunting access	Same

CONSULTATION AND COORDINATION

Federal Agencies

Environmental Protection Agency
Federal Emergency Management Agency
United States Army Corps of Engineers
United States Fish and Wildlife Service
United States Soil Conservation Service

State Agencies

West Virginia Department of Natural Resources
- Division of Environmental Standards
- Division of Sediment Control
- Division of Water Resources
- Division of Wildlife Resources
- Natural Heritage Program

West Virginia State Parks

APPENDIX A: DESCRIPTION OF PLANNING UNITS

PLANNING UNITS

A planning unit is a section of the park that has both physical and visitor use characteristics that differentiate it from other sections of the park. At New River Gorge National River four such geographic areas/planning units have been designated. Division of the park into planning units is only for planning purposes – it makes it easier to visualize and comprehend this complex landscape and ensures that decisions about any one site are made in relation to possible effects on neighboring sites. Moving from south to north (following the flow of the river) the units are the Upper Gorge unit, the Glade Creek unit, the Middle Gorge unit, and the Lower Gorge unit.

Each of the four planning units has its own unique qualities and significance that differentiate it from the other units. In addition, each unit has been given a management and use emphasis that relates to its uniqueness.

Upper Gorge Unit

Significance. This southernmost unit of the park is characterized by an agricultural landscape and flatwater that is punctuated by two scenic waterfalls and the mountain community of Hinton. The excellent warm-water fishery on this part of the river is some of the best in the state. Unusual plant and animal diversity, including at least five species of plants that are considered rare in the state, and unique river-rock riparian habitat are in the Upper Gorge Unit.

Emphasis. Because the park is crossed by Interstate 64 in this unit, highway travelers will be introduced to the national river in much the same way that the Canyon Rim contact facility serves visitors on US 19 to the north. More casual river and shoreline recreation, such as fishing, floating, picnicking, and environmental education, will be emphasized.

Glade Creek Unit

The significance and emphasis of this unit are described in the main body of this document.

Middle Gorge Unit

Significance. The Middle Gorge unit has the greatest variety of accessible natural and historical features and recreational sites. Access is by road and trail corridors that extend the entire length of the unit on opposite sides of the river.

Emphasis. Site-specific interpretation and more contemplative recreation will be emphasized in this unit. Thurmond and McCreery could serve as principle orientation points at either end of the unit – Thurmond focusing on railroading and transportation stories and McCreery addressing recreation opportunities and natural history themes. Improvements at river access points will upgrade facilities to a higher standard.

Lower Gorge Unit

Significance. This unit is the deepest section of the gorge, characterized by steep slopes and sheer drop-offs from the escarpment that runs along the rim. The narrow river corridor drops significantly in elevation over a short distance, creating many rapids. No active settlements remain in this section of the park, although the unit does contain remains of important historic sites at Sewell, Kaymoor, and Nuttallburg. The natural environment has all but reclaimed most of the land within the unit. River runners are the predominant users of this portion of the gorge. Local fishermen and hunters continue

to use this area much as they did before the park was established. The rock outcrops along the rim provide dramatic scenic viewing opportunities for more passive visitors and rock climbing challenges for the more adventurous visitor. Road access to the river is limited to each end of the unit and at Cunard.

Emphasis. This unit of the park is one of dramatic contrasts in both landscape and visitor experience. On the rim, the emphasis will be to introduce travelers to the New River Gorge. At the other extreme – 1,000 feet below on the river – park users raft or kayak the challenging class V rapids. Opportunities will be offered for relaxed picnicking, taking short hikes on loop trails, attending environmental education programs, or participating in more challenging activities such as rock climbing along the "Endless Wall." Most land-based development and destination activity will be at sites on or near the rim. The river shoreline will be managed as a more primitive area with fewer modern conveniences.

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PLANNING TEAM

NATIONAL PARK SERVICE, DENVER SERVICE CENTER

Dennis Piper, Team Captain, Landscape Architect/Planner
Mary Riddle, Natural Resource Specialist

NATIONAL PARK SERVICE, NEW RIVER GORGE NATIONAL RIVER

Joe Kennedy, Superintendent
Henry Law, Assistant Superintendent
Andy Kardos, Chief of Interpretation
Bill Hofmeyer, South District Interpreter
Leon Clifford, Park Planner, Denver Service Center
Meg Weesner, Resource Management Specialist

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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